DOCUMENT RESUME

ED 072 351 AC 014 193

AUTHOR Wurster, Stanley R.; Whitt, Dennis D.
TITLE A Comparison of Psychiatrically Ill Adults and Non-Psychiatrically Ill Adults Sub-Test Scores on the Test of General Educational Development.
PUB DATE Dec 72
NOTE 26p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Academic Achievement; *Achievement Tests; Adult Learning; Comparative Analysis; Educational Research; *General Education; *Institutionalized (Persons); *Mental Illness; Middle Aged; Participant Characteristics; Statistical Analysis; Testing; *Test Results; Young Adults
IDENTIFIERS *Test of General Educational Development

ABSTRACT

The purpose of this study was: (1) to examine the scores achieved by psychiatrically ill adults who successfully passed the Test of General Educational Development while patients at the Arizona State Hospital; (2) to examine the scores achieved by non-psychiatrically ill adults who successfully passed the Test of General Educational Development; and (3) to determine if there was a significant difference in the scores attained on the five sub-tests of the Test of General Educational Development between psychiatrically ill adult and the non-psychiatrically ill adult. The null hypothesis tested was: There is no significant difference between the scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adult and the non-psychiatrically ill adult. A review of research literature did not reveal educational research studies that were directly pertinent to the study. Both the group of ill adults (43, ages 17 to 58) and the non-ill adults (143, ages 17 to 61) had successfully completed the Test of General Educational Development. The means of the two groups on the five sub-tests were analyzed by use of the t-test. Analysis of the data showed the following: (1) There is no significant difference in the mean scores of the two groups at the .05 level of significance on sub-test 1 (expression) and sub-test 2 (literature); and (2) There is a significant difference in the mean scores of the two groups at the .05 level of significance on sub-test 2 (social studies), 3 (natural science), and 5 (mathematics). (DB)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

ED 072351

A Comparison of Psychiatrically Ill Adults and Non-Psychiatrically Ill Adults Sub-Test Scores on The Test of General Educational Development

by
Dr. Stanley R. Wurster
Assistant Professor
Arizona State University

and

Dennis D. Whitt
Graduate Student
Arizona State University

AC 014193

Arizona State University
December, 1972

ACKNOWLEDGEMENTS

May we express our sincere appreciation to Mr. J. Lewis Monical, Educational Administrator, Arizona State Hospital, Phoenix, Arizona, and to Mrs. Geri Howard, GED Supervisor, Department of Education, Phoenix, Arizona. Their interest, guidance, and assistance made this research possible.

S.R.W.
D.D.W.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	iv
CHAPTER	
I. INTRODUCTION	1
The Problem	2
Statement of the Problem	2
Hypothesis	2
Assumptions	2
Definition of Terms	3
Importance of the Study	4
Delimitations	5
II. REVIEW OF THE LITERATURE	6
Summary	8
III. METHODS AND PROCEDURES	9
Selection of Participants	9
Description of the Instrument Used	9
Procedures Used in Data Collection	10
Hypothesis to be Tested	10
Statement of Statistical Techniques Used in Analysis	11
IV. ANALYSIS AND INTERPRETATION OF THE DATA	12
Presentation of Data Collected	12
Analysis of Data Collected	14
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	18
Summary	18
Conclusions	19
Recommendations	20
LIST OF REFERENCES	21
BIBLIOGRAPHY	22

LIST OF TABLES

Table | Page

I. CHRONOLOGICAL AGE CLASSIFICATION FOR THE PSYCHIATRICALLY ILL AND THE NON-PSYCHIATRICALLY ILL ADULT 13

II. MEANS AND "t" RATIO FOR EACH GROUP FOR EACH OF THE FIVE SUB-TESTS OF THE GENERAL EDUCATIONAL DEVELOPMENT TESTS 15

CHAPTER I

INTRODUCTION

In today's modern world and progressively more complex society the need for education and academic achievement is becoming increasingly more prevalent. Without adequate education the opportunity for employment and advancement is indeed limited. This holds true not only for the non-psychiatrically ill adult, but also for the psychiatrically ill adult.

The traditional role of the psychiatric hospital is ever-changing. Modern hospitals are not custodial institutions to rid society of madmen and lunitics, but institutions for rehabilitating the psychiatrically ill. (3:49) Education can play an important role in the rehabilitation of the psychiatrically ill adult. "...the modern hospital program tends to be increasingly an educational one, a training in practice living, with the guidance of teachers who used to be called recreational therapists and occupational therapists." (3:297) "To those who are nearly or quite well, and who remain in an asylum for fear of relapsing at home, or for other reasons, schools afford enjoyment and often a means for improvement which are highly valued by the patients themselves." (3:68)

Education is a life-long, on-going process by which one grows and matures throughout his lifetime. Adults, as well as children, can benefit from education and learning. "Increasing evidence is coming in to support the view that adults of all ages can learn effectively (that age has no veto power over learning)." (2:90) Academic education is

one of the important contributors to the restoration of self-esteem with the psychiatrically ill adult. Academic achievement provides the psychiatrically ill adult with successful experiences thereby building the self-esteem needed.

To attain academic achievement, the ability of the psychiatrically ill adult, and teachers' expectancies of the psychiatrically ill adult, deserves further exploration.

The Problem

Statement of the Problem

The purpose of this study was: (1) to examine the scores achieved by psychiatrically ill adults who successfully passed the Test of General Educational Development while patients at the Arizona State Hospital; (2) to examine the scores achieved by non-psychiatrically ill adults who successfully passed the Test of General Educational Development; and (3) to determine if there was a significant difference in the scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adult and the non-psychiatrically ill adult.

Hypothesis

The null hypothesis to be tested was: There is no significant difference between the scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adult and the non-psychiatrically ill adult.

Assumptions

In this study four assumptions were made: (1) that successful completion of the Test of General Educational Development provided a measure of the individual's ability to gain and retain educational materials;

(2) that the non-psychiatrically ill adults were so classified based on the fact that they were not institutionalized at the Arizona State Hospital; (3) that the Test of General Educational Development dates and records were correctly recorded at the Arizona State Hospital and at the Department of Education, Phoenix, Arizona; and (4) that there is a high degree of correlation between the scores made on the various sub-tests of the Test of General Educational Development even though several editions (or forms) of the sub-tests were administered during the period over which the study was conducted.*

Definition of Terms

The following terms need clarification for this study:

Educational: Unless otherwise specified, educational as used in this study, will refer to academic education as opposed to vocational training. Thus the subjects in this study would be studying academic courses approximating those of students in a "college-bound track" in a traditional high school.

Psychiatrically Ill Adult: Psychiatrically ill adults will refer to those adults who received psychiatric treatment at the Arizona State Hospital. These adults include both in-patients (those living at the Arizona State Hospital) and out-patients (those living in the community but receiving treatment at the Arizona State Hospital).

Non-Psychiatrically Ill Adult: Non-psychiatrically ill adults will refer to those adults who successfully completed the Test of General Educational

*It should be noted that comparisons of different GED scores can be legitimately made even though the scores were obtained on different test forms. Through a procedure known as "equating" the same scores on different forms of the GED are made essentially equivalent. (11:24)

Development at a testing center other than the Adult and Adolescent Learning Center, Arizona State Hospital.

Test of General Educational Development: This test was designed by the United States Armed Services Institute in 1942 and is designed to be a measurement of knowledge usually attained by the typical general educational program in the high school; it is a test of high school equivalency. (11:2) This test consists of the following five sub-tests: (a) Expression; (b) Social Studies; (c) Natural Science; (d) Literature; and (e) Mathematics.

Importance of the Study

The Adult and Adolescent Learning Center at the Arizona State Hospital, Phoenix, Arizona, is one of the available facets of the rehabilitation of the psychiatrically ill adult to facilitate their discharge from the Arizona State Hospital to the community. One of the major phases of this educational facility is to academically prepare the psychiatrically ill adult to take the Test of General Educational Development. Upon successful completion of this test, the Arizona State Department of Education awards a Certificate of High School Equivalency. This certificate is recognized by many colleges and employers as the equivalent of a four year course in high school. This recognition allows the discharged patient to pursue higher educational goals or to obtain employment for which he was not previously qualified.

In order to provide as meaningful experience as possible for the psychiatrically ill adult much needs to be discovered about the academic abilities of the psychiatrically ill adult. In this study an attempt was made to examine the scores attained on the five sub-tests of the

Test of General Educational Development of psychiatrically ill adults and non-psychiatrically ill adults and thereby aid in the exploration of the academic educational potentialities of the psychiatrically ill adults in a psychiatric institution.

Delimitations

The research project was delimited as follows:

1. The psychiatrically ill adults were individuals who had successfully passed the Test of General Educational Development while they were patients at the Arizona State Hospital attending the Adult and Adolescent Learning Center.

2. The non-psychiatrically ill adults were individuals who had successfully passed the Test of General Educational Development at a testing center in the state of Arizona other than the Adult and Adolescent Learning Center, Arizona State Hospital.

3. No attempt was made to determine the actual number of years of formal education the subjects had completed prior to successfully passing the Test of General Educational Development. No individual who had successfully completed a regular high school course was included in this study.

4. No attempt was made to determine the amount of studying the subjects did prior to successfully passing the Test of General Educational Development.

5. All of the psychiatrically ill adults involved in this study received some formal educational experience while at the Adult and Adolescent Learning Center; this study does not, however, attempt to evaluate the extent or appropriateness of the educational experiences provided.

CHAPTER II

REVIEW OF LITERATURE

A review of literature did not reveal educational research studies that were directly pertinent to this particular study. Much research has been conducted with regard to the psychiatrically ill adult, but not in terms of educational endeavors. In addition, research has been conducted with emotionally disturbed children in terms of educational achievement and educational expectancies. The Test of General Educational Development has been the subject of much research, but these studies were primarily predictive studies of those who enrolled in colleges based on their successful completion of the Test of General Educational Development.

Graubard (10:55) studied 108 emotionally disturbed boys using the Quay Behavior Problem Checklist, achievement tests, and intelligence test; 7 sub-groups were then established and one conclusion that was drawn was that the more aggressive groups were retarded in reading relative to chronological age.

Tamkin (9) stated that Jastak had "observed that high reading but low arithmetic scores tend to occur in abnormal mental states of a developmental nature of long standing as in neurosis and schizophrenia in both adults and children."

Frazier (7:2) stated "the basic purpose of the psychiatric treatment is to change the patient in some way." In addition, he felt that one of the aspects of psychotherapeutic treatment was to restore the patients higher mental processes, thereby restoring the patient's ego sufficiently for the patient to cope with the stresses of life.

Harrison (8) indicated that some of the patients were so regressed that they had contributed nothing to the government meetings on the ward. These patients were now participating and stated they did not want to give up adult education because they felt they were learning and felt important for the first time.

The Test of General Educational Development has been the subject of various types of research. Sharon (11:57-60) studied 1,367 students who had taken the Test of General Educational Development and were admitted to one of 40 institutes of higher learning. The colleges supplied the Test of General Educational Development scores, the Scholastic Aptitude Test scores, and the cumulative grade point average for each of the subjects. A questionnaire was sent to each of the subjects regarding history and attitude; 538 subjects returned the questionnaire. In addition, 30 interviews were held on 4 different campuses with the subjects involved. After analysis, some of the conclusions indicated the following: (1) students enrolled in senior colleges earned slightly higher scores on all tests than students who enrolled in junior colleges; (2) little or no relationship was found between test achievement and age, amount of previous formal schooling, or the time elapsed since formal schooling; (3) college grades of the Test of General Educational Development recipients were only slightly lower than the college grades of traditional students; and (4) attrition did not appear to be any more serious with the Test of General Educational Development students than with traditional students.

Andrew (4) conducted a study to determine whether or not students who drop out of high school before graduation perform as well in college

as a matched group of students who do graduate from high school. He matched 209 pairs by age, sex, college, and scholastic index. He concluded that the traditional high school graduate completed more quarters successfully, took more hours, and carried a heavier load. He also concluded that the traditional high school graduate received more grades of "A", "B" and "C", and fewer grades of "D", and "F".

Crouch (6) and Andrew (5) both concluded that various amounts of high school training showed very little correlation with scores attained on the Test of General Educational Development.

Summary

A review of literature did not reveal educational research studies that were directly pertinent to this particular study. Research dealing with the psychiatrically ill patient does appear to indicate that these persons have educational handicaps in some academic areas. It is also evident that the psychiatrically ill patient needs to develop self-esteem and to develop ego sufficiently to cope with life situations.

The research conducted involving the Test of General Educational Development has resulted in differing conclusions. Some research indicates the traditional high school graduate will perform more successfully in higher education and some research contradicts this conclusion. The research reviewed did indicated that the amount of previous high school training showed very little correlation with the scores attained on the Test of General Educational Development.

CHAPTER III

METHODS AND PROCEDURES

To test the hypothesis that there is no significant difference between the scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adult and the non-psychiatrically ill adult, the two groups were compared on the basis of their mean score achieved on the five sub-tests. The purpose of this chapter is to describe the instrument used, to describe the procedures used in data collection, to state the hypothesis to be tested, and to state the statistical technique used in analyzing the data collected.

Selection of Participants

The psychiatrically ill adults chosen for this study were 43 adults, ages 17 to 58, who had successfully completed the Test of General Educational Development at the Adult and Adolescent Learning Center, Arizona State Hospital, between January 1, 1970 and June 30, 1972.

The non-psychiatrically ill adults chosen for this study were 143 adults, ages 17 to 61, who had successfully completed the Test of General Educational Development at a testing center other than the Adult and Adolescent Learning Center, Arizona State Hospital, but within the state of Arizona. The selection procedure used for this group of adults is known as "stratified systematic sampling."

Description of the Instrument Used

The Test of General Educational Development is a test designed by the United States Armed Services Institute in 1942 and is designed to be a measurement of knowledge usually attained by the typical general educ-

tional program in the high school; it is a test of high school equivalency. (11:2) This test consists of the following five sub-tests: (a) Expression; (b) Social Studies; (c) Natural Sciences; (d) Literature: and (e) Mathematics. A passing score of 225 is necessary with the lowest score permissible on any one of the five sub-test set at 35. Anyone taking the test must have reached the age of 19 with exceptions being made for those who are 17 or 18 years of age and need a high school certificate for enrollment in a college or for the purposes of employment, provided they have not been enrolled in a traditional high school for the immediate preceding year.

Procedures Used in Data Collection

The procedure used to collect the data for the psychiatrically ill adults was to examine the educational files at the Adult and Adolescent Learning Center, Arizona State Hospital, recording the scores attained on each of the five sub-tests of the Test of General Educational Development for each subject involved in this study.

The procedure used to collect that data for the non-psychiatrically ill adults was to examine the records maintained by the Department of Education, 1735 West Jefferson, Phoenix, Arizona, recording the scores attained on each of the five sub-tests of the Test of General Educational Development for each subject involved in this study.

Hypothesis to be Tested

The null hypothesis in this study to be tested was: There is no significant difference between the scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adults and the non-psychiatrically ill adults.

Statement of the Statistical Technique Used in Analysis

The statistical technique used in analysis on the means of the two groups on the five sub-tests in this study is known as the "t-test." The formula used is as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left[\frac{\sum x_1^2 + \sum x_2^2}{n_1 + n_2 - 2}\right]\left[\frac{1}{n_1} + \frac{1}{n_2}\right]}}$$

This is the appropriate statistical technique to utilize when determining if there is a significant difference between means for two groups. (1:97)

CHAPTER IV

ANALYSIS AND INTERPRETATION OF THE DATA

The purpose of this chapter is to present the data collected and utilized in this research study, and to analyze the data collected.

Presentation of Data Collected

Although no attempt was made in this study to analyze the data collected in terms of chronological age classifications, it was felt that the two groups utilized should be approximately equal in terms of chronological age, thereby insuring more reliability in the results obtained. Table I, Page 13, provides a comparison of chronological age classifications for both the psychiatrically ill adults and the non-psychiatrically ill adults.

The purpose of this research was: (1) to examine the scores achieved by psychiatrically ill adults who successfully passed the Test of General Educational Development while patients at the Arizona State Hospital; (2) to examine the scores achieved by non-psychiatrically ill adults who successfully passed the Test of General Educational Development; and (3) to determine if there was a significant difference in the means attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adults and the non-psychiatrically ill adults. A series of t-tests were conducted in order to determine, at a .05 level of significance, if there was a significant difference in the mean scores achieved by psychiatrically ill adults and the mean

TABLE I

CHRONOLOGICAL AGE CLASSIFICATION FOR THE PSYCHIATRICALLY ILL AND NON-PSYCHIATRICALLY ILL ADULT

Chronological Age Classification	Psychiatrically Ill Adult		Non-Psychiatrically Ill Adult	
	Number Sampled	Percent of Total Sampled	Number Sampled	Percent of Total Sampled
17-24 yrs.	23	46.9%	71	49.6%
25-39	16	32.7	49	34.2
40-up	10	20.4	23	16.2
Total	49	100.0%	143	100.0%

scores achieved by the non-psychiatrically ill adults. The formula used to conduct these series of t-test is as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left[\frac{\Sigma x_1^2 + \Sigma x_2^2}{n_1 + n_2 - 2}\right]\left[\frac{1}{n_1} + \frac{1}{n_2}\right]}}$$

In consulting the T-Table provided, there were no figures available for 190 degrees of freedom; therefore, ∞ degrees of freedom was used. The results of the five t-tests conducted appear in Table II, Page 15.

Analysis of Data Collected

Although no attempt was made in this study to analyze the data collected in terms of chronological age classifications it can be seen from Table I, Page 13, that there are no large percentage differences in each of the three chronological age classifications between the two groups studied.

In the age classification of 17 to 24 years of age the psychiatrically ill adults were represented by 23 of the 49 sampled which represents 46.9% of that group. The non-psychiatrically ill adults were represented by 71 of the 143 sampled which represents 49.6% of that group.

In the age classification of 25 to 39 years of age the psychiatrically ill adults were represented by 16 of the 49 sampled which represents 32.7% of that group. The non-psychiatrically ill adults were represented by 49 of the 143 sampled which represents 34.2% of that group.

In the age classification 40 years of age and older the psychiatrically ill adults were represented by 10 of the 49 sampled which represents 20.4%

TABLE II

MEANS AND "t" RATIO FOR EACH GROUP FOR EACH OF THE FIVE SUB-TESTS OF THE GENERAL EDUCATIONAL DEVELOPMENT TESTS

Sub-tests of GED	Means of Psychiatrically Ill Adults	Means of Non-psychiatrically Ill Adults	"t" Ratios
Sub-test 1 Expression	50.90	48.70	-1.88
Sub-test 2 Social Studies	54.12	51.55	-1.97*
Sub-test 3 Natural Science	54.96	52.80	-1.96*
Sub-test 4 Literature	54.29	52.87	-1.07
Sub-test 5 Mathematics	53.61	49.66	-3.58**

df = 190
* "t" @ 1.960 (.05 level of significance)
** "t" @ 2.576 (.01 level of significance)

of that group. The non-psychiatrically ill adults were represented by 23 of the 143 sampled which represents 16.2% of that group.

Examination of Table II, Page 15, which shows the means and "t" ratios for each group on each of the five sub-tests of the Test of General Educational Development reveals the following:

Sub-test 1 - Expression: The mean of the psychiatrically ill adults was 50.90 and the mean of the non-psychiatrically ill adults was 48.70. This provided a "t" ratio of -1.88 which indicates there is no significant difference in the means of the two groups at the .05 level of significance.

Sub-test 2 - Social Studies: The mean of the psychiatrically ill adults was 54.12 and the mean of the non-psychiatrically ill adults was 51.55. This provided a "t" ratio of -1.97 which indicates there is a significant difference in the means of the two groups at the .05 level of significance. It should be pointed out that the "t" ratio of -1.97 is extremely close to the "t" ratio of the .05 level of significance which is 1.960.

Sub-test 3 - Natural Science: The mean of the psychiatrically ill adults was 54.96 and the mean of the non-psychiatrically ill adults was 52.80. This provided a "t" ratio of -1.96 which indicates there is a significant difference in the means of the two groups at the .05 level of significance. It should be pointed out that the "t" ratio of -1.96 attained in this comparison is exactly the same as the "t" ratio of the .05 level of significance which is 1.960.

Sub-test 4 - Literature: The mean of the psychiatrically ill adults was 54.29 and the mean of the non-psychiatrically ill adults was 52.87. This provided a "t" ratio of -1.07 which indicates there is no significant difference in the means at the 0.5 level of significance.

Sub-test 5 - Mathematics: The mean of the psychiatrically ill adults is 53.61 and the mean of the non-psychiatrically ill adults is 49.66. This provided a "t" ratio of -3.58 which indicates there is a significant difference in the means of the two groups at the .05 level of significance. It should also be pointed out that there is a significant difference in the means of the two groups at the .01 level of significance.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was: (1) to examine the scores achieved by psychiatrically ill adults who successfully passed the Test of General Educational Development while patients at the Arizona State Hospital; (2) to examine the scores achieved by non-psychiatrically ill adults who successfully passed the Test of General Educational Development; and (3) to determine if there was a significant difference in the mean scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adults and the non-psychiatrically ill adults.

The null hypothesis to be tested was: There is no significant difference between the mean scores attained on the five sub-tests of the Test of General Educational Development between the psychiatrically ill adults and the non-psychiatrically ill adults.

The method used was collecting the sub-test scores of 49 psychiatrically ill adults who successfully passed the Test of General Educational Development at the Adult and Adolescent Learning Center, Arizona State Hospital, between January 1, 1970 and June 30, 1972. The sub-test scores of 143 non-psychiatrically ill adults who successfully passed the Test of General Educational Development were collected at the Department of Education, 1735 West Jefferson, Phoenix, Arizona. The selection procedure used for this group of adults is known as "stratified systematic sampling." The statistical technique used in analysis of the means for each sub-test

of the Test of General Educational Development is known as the "t-test."

Analysis of the data revealed the following:

(1) There is no significant difference in the mean scores of the psychiatrically ill adults and the non-psychiatrically ill adults at the .05 level of significance on Sub-test 1 - Expression and on Sub-test 4 - Literature. The null hypothesis tested on these two sub-tests is therefore accepted.

(2) There is a significant difference in the mean scores of the psychiatrically ill adults and the non-psychiatrically ill adults at the .05 level of significance on Sub-test 2 - Social Studies, Sub-test 3 - Natural Science, and on Sub-test 5 - Mathematics. The null hypothesis on these three sub-tests is therefore rejected.

Conclusions

It appears from the findings reported in this research that psychiatrically ill adults under the appropriate educational setting, can achieve the same educational standards needed to complete the Test of General Educational Development at a level comparable to that of the non-psychiatrically ill adults.

It also appears from the findings in this research that the teacher of psychiatrically ill adults can expect psychiatrically ill adults to achieve high school equivalency. It should be noted that the length of time spent in preparation or the teaching techniques utilized in preparation for successful completion of the Test of General Educational Development was not analyzed in this research.

Recommendations

The following recommendations are made as a result of the research study:

(1) It is recommended that the teaching technique used in the preparation of adults for successful completion of the Test of General Educational Development be analyzed to determine if there is one specific teaching technique that is most successful.

(2) It is recommended that further research be conducted with psychiatrically ill adults to determine if age, sex, ethnic background, or the number of years of traditional education play an important role in preparing psychiatrically ill adults for successful completion of the Test of Educational Development.

(3) It is also recommended that follow-up studies of those psychiatrically ill adults who successfully passed the Test of General Educational Development be conducted after discharge from the Arizona State Hospital to determine if this educational goal was helpful in the adults' adjustment to the community and society.

LIST OF REFERENCES

Books

1. Cook, David R., A Guide To Educational Research, Boston, Allyn and Bacon, Inc., 1965.

2. Kidd, J. R., How Adults Learn, New York, Associated Press, 1959.

3. Menninger, Karl, The Vital Balance, New York, The Viking Press, 1963.

Periodicals

4. Andrew, Dean C., "A Comparative Study of the Academic Achievement of High School Graduates and Non-Graduates," College and University, XXVII: 50-55, June, 1951.

5. Andrew, Dean C., "Differences in G.E.D. Test Scores According to Amount of High School Completed," College and University, XXIX: 439-441, April, 1954.

6. Crouch, Henrietta H., "An Inquiry Into the Relationship of Achievement Scores and Certain Variables in an Adult High School," Journal of Educational Research, 55: 323-327, April, 1962.

7. Frazier, Shervert H., "New Horizons in Psychiatric Treatment: Goals, Processes, and Predictions," Hospital and Community Psychiatry, 19: 1-6, January, 1968.

8. Harrison, Preston E. and others, "Aides Teach Adult Education Courses," Hospital and Community Psychiatry, 19: 176-177, June, 1968.

9. Tamkin, Arthur S., "A Survey of Educational Disability in Emotionally Disturbed Children," Journal of Educational Research, 54: 66-69, October, 1960.

Unpublished Works

10. Graubard, Paul S., "An Investigation of Reading Correlates of Emotionally Disturbed and Socially Maladjusted Children: The Relevance of a Classification Scheme to Educational Characteristics," an umpublished work completed at Yeshiva University, New York, N.Y., presented to the Office of Education (DHEW), Washington, D.C., October, 1968, 76 pages.

11. Sharon, Amiel T., "Validity of the Tests of General Educational Development for Admission of NonHigh-School Graduates to Higher Education," an unpublished work completed at the Educational Testing Service, Princeton, N.J., presented to the American Council of Education, Washington, D.C., March, 1972, 97 pages.

BIBLIOGRAPHY

Books

Elzey, Freeman F., A First Reader in Statistics, Belmont, California, Brooks/Cole Publishing Company, Inc., 1967.

Menninger, Karl, The Human Mind, New York, Alfred A. Knopf, 1957.

Periodicals

Callis, R. and Wrenn, C. G., "GED Tests as Predictors of Scholastic Success," Educational and Psychological Measurements, 7: 93-100, February, 1947.

D'Amico, Louis A. and Schmidt, Louis G., "The Comparative Achievement of Veterans Admitted to College on the Basis of General Educational Development Tests and a Selected Group of Other College Students," Journal of Educational Research, 50: 551-556, March, 1957.

Eckelberry, R. H., "General Educational Development Tests," Journal of Higher Education, 17: 331-333, June, 1946.

Graff, K., "High School Equivalency Program," Vocational Guidance Quarterly, 12: 297-299, Summer, 1965.

Lorge, Irving and Kushner, Rose, "Characteristics of Adults Basic to Education," Review of Educational Research, 20: 176-181, 1950.

Mosel, James N., "The General Educational Development Tests (High School Level) as a Predictor of Educational Level and Mental Ability," Journal of Educational Research, 48: 129-133, October, 1954.

Unpublished Works

Kenney, Helen J. and others, "Improving the Education of Emotionally Disturbed Adolescents Through Educational Programming in Terms of Curriculum and Methods," unpublished work presented to the Bureau of Research, Office of Education (DHEW), Washington, D. C., June, 1967, 100 pages.

Sticht, Thomas G., "Learning Abilities of Disadvantaged Adults," unpublished work completed at George Washington University, Alexandria, Va., presented to Human Resources Research Office, March, 1969.

ERIC Clearinghouse
MAR 14 1973
on Adult Education